# Rhodora

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THE NEW ENGLAND BOTANICAL CLUB

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# TARAXACUM PALUSTRE IN AMERICA.

M. L. Fernald.

Mr. E. Williams Hervey sent me in May last a package of Dandelions from New Bedford, Massachusetts, containing *Taraxacum erythrospermum* and a larger-headed plant which he was unable to identify satisfactorily either with that species or *T. officinale*. The plant had the general aspect of the latter species, but the short deltoid erect outer bracts of its involucre suggested *T. erythrospermum*. From this species, recently recognized[1] as well established if not indigenous in New England, Mr. Hervey's plant differed in having quite plane or flat bracts to the involucre and greenish brown achenes, and in the slightly cleft or even merely undulate-dentate leaves. A comparison showed the plant to be unquestionably *Taraxacum palustre*, DC.[2] of Europe and northern Asia.

*Taraxacum palustre* is variously treated by European authors. By most, including Nyman, Reichenbach, Lange, Hornemann, and Hooker & Jackson, it is treated as a thoroughly distinct species; by others, as Bentham & Hooker, as a subspecies of *T. Dens-leonis* (*T. officinale*); while by Blytt it is considered a variety of the common species, and is called *T. officinale*, Weber, var. *palustre*, Blytt.[3]

Whether the plant is clearly distinct from *Taraxacum officinale* it has been impossible satisfactorily to determine the past season. Certain observations, however, are worth recording, that other observers may be prepared to study the tendencies of the dandelions in their own regions during the next spring.

[1] Fernald, Bot. Gaz. XX. 323.
[2] Fl. Fr. IV. 45.
[3] Norg. Fl. i. 619.

After receiving Mr. Hervey's material I watched the dandelions in Cambridge and found that while large areas of the Cambridge Common and adjacent sections were occupied by *Taraxacum erythrospermum*, with corniculate-appendaged bracts, the outer short and ascending or merely spreading, and *T. officinale*, with the bracts all flat and unappendaged, the outer linear-lanceolate and strongly recurved even in bud, damp sheltered situations, especially roadside ditches and similar spots, were quite as often given over to *T. palustre*. And in a morning walk Mr. Walter Deane and I found *T. palustre* and *T. officinale* scattered indiscriminately by the sidewalks on Brattle Street. There, however, occurred some individuals which in their involucres were not clearly either species, and which suggested that the two plants are not specifically separable.

On May 30, in company with Messrs. Luman Andrews, C. H. Bissell, and J. R. Churchill, I visited Salisbury, Connecticut; and there by damp roadsides and in shaded dooryards and ditches *T. palustre* abounded, often to the exclusion of *T. officinale*; and though exceptional specimens showed a tendency to have more spreading bracts than in the extreme of *T. palustre*, none with the short deltoid or ovate-lanceolate outer bracts had them strongly reflexed as in *T. officinale*. From this character alone, we found it a simple matter to distinguish the two plants at some distance. The involucral character, seems, however, to be the only one by which the two plants are separable; and although that is usually so marked as to give the plant a characteristic appearance, the tendencies noted in Cambridge to a mingling of characters, lead me to conclude that it is best for the present to follow Blytt in treating *Taraxacum palustre* as a variety of *T. officinale*. The first of July *Taraxacum palustre* was found in damp soil in Cutler on the extreme eastern coast of Maine by Dr. G. G. Kennedy, Mr. E. F. Williams and the writer; and a few days later on the Aroostook River in Northern Maine by Mr. Williams and the writer.

Besides the fresh-material studied during the spring, I have seen two herbarium specimens, one collected on Blue Hill, Milton, Massachusetts, by Dr. G. G. Kennedy in April, 1896, the other at Rutland, Vermont, by Mr. W. W. Eggleston in June, 1899. These collections indicate that the plant is to be expected over a broad range.

The three dandelions now known to be well established in New England may be quickly distinguished as follows.

* At least the inner bracts of the involucre with the keels thickened near the tips forming corniculate appendages: heads about 75-flowered, yellow: achenes reddish: leaves deeply and finely runcinate-pinnatifid.

T. ERYTHROSPERMUM, Andrz. Usually in dry soil, common in the coastal district, less so inland.

* * All (or nearly all) the bracts flat and unappendaged: heads larger, orange yellow: achenes greenish or brown: leaves less cut.

T. OFFICINALE, Weber. Outer bracts of the involucre lanceolate or linear-lanceolate, strongly reflexed even in bud. — Common and widely distributed.

Var. PALUSTRE, Blytt. Norg. Fl. i. 619 (*Leontodon palustris*, Smith, Fl. Brit. ii. 823. *Taraxacum palustre*, DC. Fl. Fr. iv. 45). Outer bracts shorter and broader, mostly ovate-lanceolate or deltoid, ascending. — Damp soil, Maine, Vermont, Massachusetts, and Connecticut; and probably throughout.

GRAY HERBARIUM.

## MISCELLANEOUS NOTES ON NEW ENGLAND FERNS,— V.

GEORGE E. DAVENPORT.

NOTE 8.— *Supplementary*.

WOODSIA OBTUSA, Torrey. This fern should be added to my list in RHODORA, vol. 4, p. 49, as number 18 under C. For this year I found sterile fronds wholly green as late as March 2nd. Miss Slosson says of it: "Fertile fronds perishing in autumn, sterile fronds lasting into winter, decaying toward spring." Ledges. Me., N. H., Vt., Mass., R. I., Ct.

Mr. Gilbert has suggested the propriety of including *Onoclea sensibilis* and *Struthiopteris* in the list on account of the perennial duration of the fertile fronds.

*Correction.* — Dr. Graves, of New London, Connecticut, has called my attention to an error in crediting *Asplenium montanum* to limestone cliffs in Connecticut, and I gladly make the proper correction here. I shall always be glad to have any errors of mine pointed out and thankful to anyone who will call my attention to them so that I can make such corrections as may be necessary.

Note 9.—Some further Observations on Nephrodium. The substance of the following note was prepared for the March Rhodora in order to define more clearly my views on *Nephrodium* and its combinations, but has been withheld from publication pending the result of efforts to obtain some definite information regarding the work ("Hort. Med. Par. Cat.") cited without author for the genus *Nephrodium* by Richard in Michaux's Flora. Dr. Robinson, when consulted in regard to the matter, rightly surmised that the reference must allude to a rare publication by Marthe. Efforts to find a copy of this work in America, however, proved ineffectual and it is through the courtesy of Professor Édouard Bureau, Director of the Museum of Natural History in Paris, where the work exists, that I am now able to present the readers of Rhodora with an authentic copy of the title-page and that part of the work which relates to Nephrodium. I give the matter as it occurs in a letter from Professor Bureau to Dr. Robinson and as it concerns the earliest reference to one of the larger genera of ferns it cannot fail to interest fern students at the present time. The title page runs:

Catalogue des Plantes du Jardin Médical de Paris, disposées selon le système de Linné, avec l'explication de quelques changements faits à la système. Publié par François Marthe, cultivateur du dit Jardin. À Paris, chez Gabon, Libraire, rue et place de l'École de Médicine. An IX.

Upon the above title Professor Bureau comments as follows: Au dessous des mots: du dit Jardin est écrit à la main: *et fait par L. C. Richard de l' institut.* Nous pensons que ces deux lignes sont écrites par un employé de la bibliothèque, au moment de la donation. Sous la ligne: An IX, on a écrit *1801.* Sur la première feuille, il y a ces mots écrits: *Donné par l' auteur fructidor an 9e*; et sur le 3me feuille, on voit encore écrit: *L' auteur à la bibliothèque du Muséum national d' Histoire naturelle.* Ces deux inscriptions paraissent être de la main de Louis Claude Richard, sans que je puisse l' affirmer positivement.

Concerning the brief reference to *Nephrodium* Professor Bureau continues: À la page 120, je trouve dans le texte: — Nephrodium Filix mas. *Néphrode Fougère mâle.* Votre supposition se trouve donc vérifiée.

This communication from Professor Bureau is invaluable as it fully establishes the identity of the "Hort. Med. Par. Cat." cited by

Richard in Michaux with Marthe's Catalogue. The latter is given in Pritzel's "Thesaurus" both editions, the earlier one (1851) containing the full title exactly as here given. In Pfeiffer's Nomenclator (i. pt. 1, p. 449) the work is cited for *Botrypus* (*Botrychium*) in the same form as by Richard in Michaux and in the octavo edition of his "Nature Printed Ferns" (1859), under *Lastraea Filix-mas*, Moore also cited it in the same way for *Nephrodium Filix-mas*, Richard, giving the page (120) and date (1801) correctly.

This effectually disposes of a recent declaration that *Filix-mas*, was first placed in *Nephrodium* by "Hooker in 1862–1874"! The record here presented shows clearly enough that it was so placed by Richard himself in 1801. Desvaux also cited *Nephrodium Filix-mas*, Richard, in 1828 (Mem. Soc. Linn. vi. p. 60, see Eaton, Ferns of N. Amer. i. p. 312), thirty-four years before Hooker's use of it!

We have now a well authenticated record showing, first, the publication of *Nephrodium* two years before its publication in Michaux; and second, the publication of a generic and specific combination, which complies with that portion of the fifth rule in the Rochester Code which declares that "the publication of the *name* of the genus and the citation of one or more previously published species as examples or types of the genus with or *without* a diagnosis" shall constitute publication of a genus.

The assumption that *Nephrodium* equals *Polystichum* because *N. acrostichoides* the first species mentioned in Michaux proved to be a *Polystichum*, is thus shown to be untenable, even on the basis of those who believe that the first species under a complex genus must be taken as the type, as we have here the earlier publication of *N. Filix-mas*, fortified by the addition of the three species from Michaux and the additional historic fact that "the early writers did not always name the most typical species first." The principal of the first species fixing the type of a complex genus is altogether modern, and one that I have no where "professed" to accept notwithstanding a recent assertion to the contrary. There is, I conceive, a great difference between "the first species under a genus" and the first *correctly named* species, the latter being the form of expression which I have used. In the other form the principle has been rejected even by Dr. Britton (Science xiii. 588; 1901). It is extremely doubtful if any of the old authors ever gave a thought to the arrangement of species with any such a purpose in view, and when there is

more than one species mentioned, the first which conforms to the requirements of the genus should be sufficient to hold it. A case in point occurs in *Athyrium*, where in seven species mentioned by Roth, only one (*A. Filix-foemina*), and that the sixth, conformed to the requirements of the genus, yet that one is universally accepted as the type for *Athyrium*, whether considered as an independent genus, a sub-genus, or a mere section.

As an example of how little the early authors thought about this matter it may be stated that Presl, in his Tentamen Pteridographiae after citing Schott for *Aspidium* named his own species (*Plumieri*) first, although Schott had figured and cited *A. trifoliatum* for Swartz's type.

Here we have one of those illogical treatments where a name is transferred from its original author to another merely because that other reduces or enlarges its application. Schott illustrated Swartz's *Aspidium* from a typical species, and although he himself cited Swartz as authority, Presl subsequently cited him as authority. Now if Presl was justified in citing Schott for *Aspidium*, subsequent authors would be justified in citing *Aspidium*, Presl, as his treatment was different from Schott's. The common sense view would therefore seem to be to anchor a generic name to its original author whether its application be reduced or enlarged as the right of an author to his own should remain intact. It is of course to be expected that generic limitations should expand or contract with the varying conditions of knowledge, and especially through augmentation by additional species with slight deviations form the original characters, but otherwise congeneric.

This has been the case with *Nephrodium* which was founded on the character of the indusium, and apparently for the express purpose of separating the kidney-shaped from the peltate form; and no subsequent treatment has destroyed the force of this one character for which *Nephrodium*, Richard, stands to-day, exactly as it did more than one hundred years ago.

In tracing the further history of the genus down to the present time we find that Swartz in 1806 (Synopsis Filicum) merged *Nephrodium* into his ASPIDIUM, where it is still retained by some of the very best authorities. In 1810 Robert Brown published in his Prodromus a list of New Holland ferns under *Nephrodium*, which he separated from *Aspidium*, but without giving Richard credit for the genus as

he ought to have done. Here for the first time we have the introduction of two species, *N. unitum*, R. Br., and *N. molle*, R. Br., with the lower series of veins in the lobes connivent, but otherwise certainly congeneric with Richard's original species. Brown, however, paid no attention to the venation, and as his treatise was devoted to the consideration of New Holland ferns only his list comprises a different set of species from Richard's.

The genus continued to expand through the addition of other species with connivent veins until 1824, when Bory attempted to separate it into two divisions, retaining the connivent-veined species under *Nephrodium*, and proposing a new genus, *Lastraea*, for the species with free veins, thus exactly reversing what would have been the proper treatment, as Richard's original species were free-veined.

Bory's proposed genus does not appear to have been well received, but his most unwarrantable division of *Nephrodium* was carried still further in 1832 by Schott, who, in his Genera Filicum, figured *N. molle*, R. Br., for the type of *Nephrodium*, an error which was repeated in 1836 by Presl in his Tentamen Pteridographiae, where, for the first time, the ferns were comprehensively treated on the basis of the character of the venation in conjunction with that of the fructification.

In that work Presl cited Schott as authority for *Nephrodium*, although the latter clearly had no intention of appropriating the name to himself as he cited Richard for it. Presl also cited Schott as authority for *N. molle*, notwithstanding the fact that Robert Brown (l. c.) had published the combination in 1810.

Not, however, until this work of Presl, had any attention been paid to the character of the venation, which did not therefore enter into previous considerations as a factor in the determination of genera. Therefore it was not surprising that Richard's genus should have become so much enlarged by the addition of connivent and netted-veined species as to make some kind of division, if only sectional, desirable. The really surprising thing about it is that when such division was deemed necessary, the free-veined species, which were characteristic of the original types should have been set aside and under another name assigned to an author who had nothing to do with the original genus.

Presl resuscitated Bory's *Lastraea*, changing the orthography to *Lastrea*, and assigning to it all of the free-veined species, which, as

we have seen, properly represented the original forms of *Nephrodium*; yet singularly enough among the species so referred we find two, *L. patens* and *L. tetragona* with connivent veins!

At the same time Presl proposed two additional genera, *Pleocnemia* for the species having some of the veins in the same as well as contiguous groups united and *Sagenia* for those with the veins copiously anastomosing, thus dividing *Nephrodium* into four genera. These were subsequently reduced to subgenera, or sections by Sir William Jackson Hooker, who, while substantially adopting Presl's arrangement, treated *Nephrodium* as one comprehensive genus based on the original character of the indusium, retaining *Lastrea* for the free-veined, and establishing his own *Eunephrodium* for the connivent-veined section.

The order of arrangement adopted by Hooker in Genera Filicum placed *Eunephrodium* in the first section with Schott as authority, for the section only, but in Species Filicum Richard is cited as authority for the whole genus. In Synopsis Filicum of Hooker and Baker, the order of arrangement was changed so as to place the free-veined section first, thus practically restoring the original form of Richard's genus, and this form has continued to the present time, so that it is not too much to say that there has been an almost uninterrupted use of *Nephrodium* since its first establishment by Richard in 1801.

Now in this early publication of *Nephrodium Filix-mas* by Richard we have just such a generic name and example; and no advocate of the Rochester code can consistently reject it. It is, moreover, fortified by the well-known vernacular name "Fougère mâle" which accompanies it, and made absolute by the addition of three more species from Michaux's Flora that are congeneric.

As *Nephrodium Filix-mas* is thus shown to be the earliest *Nephrodium* known, it not only fixes the initial date for the genus at 1801, but, as it antedates *N. acrostichoides*, it effectually disposes of the argument of those who claim that *Nephrodium* equals *Polystichum* because *N. acrostichoides*, erroneously supposed to be the earliest species, belongs to the latter genus.

The absence of *N. Filix-mas* from Michaux's Flora was perfectly natural, as it was not at that time known to be one of the North American plants with which alone Michaux's Flora was dealing.

Here then we have, first, the authentification of Richard's earlier

use of *Nephrodium* as per his citation in Michaux, second the verification of Moore's citation for *N. Filix-mas*, and third, a type that is not a *Polystichum* although Adanson described it as such ("envolucre enparasol.")

However as *Filix-mas* is the species upon which *Dryopteris* is assumed to rest let us briefly consider the relative position of that genus and *Nephrodium* with regard to it.

*Dryopteris*, although derived from the earlier pre-Linnaean name (*Druopteris*) of Dioscorides, dates from Adanson (1763), *Nephrodium* from Richard (1801), and this gives to the name *Dryopteris* a priority in time. But the name *Dryopteris* was not used again by any author for more than seventy years after its use by Adanson and this, according to the Berlin Rule [1] which is now accepted by many conservative botanists, relieves us of any obligation to take such a name up now. Furthermore Adanson's description does not apply to the species mentioned in connection with it, and the result is an incongruous combination, which is not entitled to serious consideration. If we put this to a test by analysis we will have some such form as this: —

DRYOPTERIS: — "*enveloppe enparasol*" i. e. indusium peltate, with uninterrupted margin, the attachment being strictly central.

*Example*: — *Filix-mas*, indusium *cordate-reniform*, i. e. with the margin deeply cleft on one side into a definite sinus with the attachment at its base, thus appearing one-sided instead of central.

*Result*, a disagreement.

Now the interpretation of "enparasol" admits of only one meaning and it has never had any other than the one which represents a lady's sunshade — a parasol, or an umbrella, and no one has ever known a parasol to have its handle otherwise than in the centre, or to have its rim divided. It is impossible to reconcile the disagreement that we have here, and I know of no better characterization for a genus with its description standing for one thing and its *type* (!) for another than the one I have previously used of being ill-defined. It is not enough to say that Adanson intended to describe *Filix-mas*, the fact that he did not do so correctly is beyond dispute. Besides, no subsequent author used *Dryopteris* until Schott, in 1834 (71 years

[1] As this rule, which is known as the fifty year limit, has been much misrepresented of late, it may be well to explain here that it has nothing whatever to do with species, but applies to genera only.

afterward) used *Dryopteris Filix-mas* as a *synonym* under *Polystichum*, thus giving rise to the later synonym of *Dryopteris Filix-mas*, Schott, and yet Schott never *adopted* the genus! Now if Adanson established *Dryopteris* on *Filix mas*, the proper combination should be *Dryopteris Filix-mas*, Adanson, and that would serve to render the disagreement which has been pointed out still more conspicuous. But in considering the claims of *Nephrodium* we have an entirely different state of affairs. We have here a combination properly published with a reference that makes the species selected typical of the genus, and within two years a reaffirmation of the generic name accompanied by a fuller description that defined the character of the fructification as the one special generic character, and in this sense the genus has been maintained by good authorities from that time to this exactly as I have before stated in my notes.

The Swartzian genus *Aspidium* comprised two well marked divisions each characterized by the presence of a definite form of the indusium sufficiently constant to constitute an almost absolute line of separation, the exceptions being either accidental, or temporary, and not of sufficient frequency to affect the general result. Both have circular sori but in one the indusium is round with entire margin, the attachment showing exactly in the centre, thus forming the *peltate indusium*, which exactly corresponds to Adanson's description "*en-parasol*," and constituting the basis for *Aspidium* as reduced, *Polystichum* or *Tectaria*; in the other the margin of the indusium is incised with the attachment apparently one-sided, and forming the one special character, the *cordate-reniform indusium*, upon which *Nephrodium* rests.

The question of the venation is really another matter. There being only free-veined species in our New England ferns, with which alone these notes are dealing, it has not seemed to me necessary to do more than to bring out the historic fact that the early species had free veins, in order to show the true characters of the original species. No account, however, was taken of this fact by Richard, and the presence of free veins in the original species may be taken as an accidental coincidence which does not change the original indusial character on which the genus was based. The subsequent expansion of the genus by the addition of species with connivent veins was a perfectly natural one and cannot vitiate its claims to recognition. Neither can any objection, based on the "*melange*" which Richard

placed in the genus, have any weight, as it would act with equal force against nearly all of the early fern genera, especially the Linnaean *Polypodium* and *Asplenium*, which were quite as badly mixed up as Richard's *Nephrodium*.

In tracing out the historic evolution of *Nephrodium* from its publication in Marthe's Catalogue in 1801, it is interesting to note the fact that Richard's name does not appear at all in connection with the reaffirmation and enlargement of the genus in Michaux's Flora in 1803, an omission which probably led to the habit of citing Michaux as authority, at least for the original combinations. There would seem however, to be little doubt that Richard elaborated the ferns in Michaux's Flora. Pritzel's references to the matter are somewhat indefinite, and the only certain inference that can be drawn from them is the fact that Michaux and Richard were collaborators in the preparation of the Flora, and as Richard was known to have been the cryptogamic botanist, the inference that he was responsible for the treatment of the ferns is unavoidable.

Consequently if Richard was the real author of that portion of the work it is only right to credit him with such combinations as occur under *Nephrodium*. In accordance with this reasoning I have, in my notes, cited Richard as authority for combinations usually credited to Michaux.

Now in Michaux's Flora we have three species, *Nephrodium Noveboracense*, Desvaux, *marginale*, Richard, and *cristatum*, Richard, that are congeneric with *Filix-mas* and we may justly claim that the genus is thoroughly grounded on a substantial basis.

This is true whether we write Brown, Schott, Presl, Smith or Hooker as authorities for subsequent changes. One fact stands out clear and indisputable, and that is that the Swartzian group of Aspidiums consists of two distinct types in the character of their indusia, and *Nephrodium* has been used in the Richardian sense for the type with cordate-reniform indusia for more than a century exactly as I have stated.

The treatment of the genus abroad has been more or less variable according to the views of different authors, and in this country it has, until quite recently, been used in accordance with the views of Mettenius as approved by Prof. Eaton. Of late, however, there has been an increasing tendency to recognize the independence of *Nephrodium*, and this I believe will become more and more universal.

It has been in use by Shimek for a long time. Mr. Gilbert has adopted it, and Mr. Clute has signified his intention of doing so for the future. More recently Mr. House, and now Prof. Waters has adopted it in his admirable Analytical Key for the Ferns of the Northeastern States Based on the Stipes. As against *Dryopteris* its claims are twofold: — first, the derivation of its name — from νεφρος (nephros) referring to the kidney form of indusium — exactly indicates its generic character; second, it rests upon at least four clearly defined species that accurately represent the generic characters.

Finally we may sum up the various points of this article as follows: — (1) *Nephrodium* as a genus has been in existence for more than one hundred years (2). With the exception of the brief period of four years intervening between Swartz's reference of it to *Aspidium* in 1806, and its restoration by Robert Brown in 1810, it has been recognized in one form or another from the time of its original publication to the present. (3) Having been established on a special character the subsequent addition of other characters could not destroy the force of the original.

What I wish most to emphasize here is this: —*Nephrodium* rests primarily on the character of its indusium. The nature of its venation had nothing to do with its original definition. In subsequent revisions, based on new sets of characters in which the venation had become prominent, the character of the original species should have been considered as typical of the genus. The fact that this was not always done, however, does not deprive us of the right to maintain the genus in its present form.

Medford, Massachusetts.

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Some Additions to the Flora of Massachusetts. — On the 29th of May of this year Mr. Ezra Brainerd and I found a large colony of bushes of *Crataegus scabrida*, Sargent, near the banks of a small stream some two miles west of Williamstown. This appears to have been the first time that this common Vermont species has been noticed in Massachusetts. On the same day we found *Crataegus asperifolia*, Sargent, along the road between Williamstown and North Adams. This is also a new plant for Massachusetts. The following day we saw near the summit of a high rock close to the main street

of Great Barrington two small trees of *Quercus acuminata*, Sargent. The nearest stations to Great Barrington known to me for this tree are Newberg, New York, where many years ago I saw a single specimen about two miles north of the city, and Gardener's Island in Lake Champlain, the only place in New England, with the exception of the one at Great Barrington, from which this tree has been reported. Mr. Brainerd tells me that the trees on Gardener's Island have recently been destroyed. On May 31st in driving from Great Barrington to West Stockbridge we saw in a low wet meadow large trees of *Crataegus lobulata*, Sargent, *Crataegus Pringlei*, Sargent, and by the roadside a bush of *Crataegus asperifolia*, Sargent.— C. S. Sargent, Arnold Arboretum.

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Two Noteworthy Carices at Sudbury Massachusetts.— On June 17th, 1902, the writer accompanied by Messrs. M. L. Fernald and W. P. Rich took an early train for South Sudbury, Massachusetts. We went in quest of a rare sedge, *Carex teretiuscula*, Gooden. var. *ramosa*, Boott, which Mr. Fernald and Miss Helen M. Noyes had discovered in June, 1901. It was found as we expected in a beautiful little open peat bog in company with Pogonias, Arethusas and Saxifrages and just in time to be collected. It had previously been known in New England only from Vermont (see Brainerd, Jones and Eggleston's Catalogue) and from the town of Mt. Washington, Berkshire County, Massachusetts (July 5, 1859, Wm. Boott in Herb. Gray). Mr. Fernald also collected it this year on May 30th at Salisbury in northwestern Connecticut. Thus its station at South Sudbury is the first east of the Housatonic river, although the plant has since (July 13th) been found in a swamp at Presque Isle, Maine, by Mr. Fernald and the writer.

While we were busily pulling up a sufficiency of the Sudbury material for distribution among our friends and correspondents Mr. Fernald joyously exclaimed that he had discovered a new *Carex*. We have often had this experience when botanizing with this accomplished caricologist and therefore were not particularly startled, but when we learned that it was *Carex tetanica*, Schkuhr, var. *Woodii*, Bailey, we shared in his pleasure for we were informed that it had been collected in New England only once before and then by himself in a larch swamp on May 30th, 1902, at Salisbury, Connecticut. It

has been reported from St. Francis, Maine (Fernald, Proc. Portland Soc. Nat. Hist. II, 89), but upon re-examination the St. Francis plant proves to be quite a different species, which still awaits study.

The South Sudbury station is therefore the second in New England. True *C. tetanica*, a plant with shorter, denser spikes, was collected years ago by Dewey at Stockbridge, Berkshire County, Massachusetts, and *C. tetanica* of Graves's note in Rhodora, (III, 64) from Waterford, Connecticut, is very immature, so that it is hard to say whether it is the species or the variety.— Emile F. Williams, Boston.

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Carex aurea in Connecticut.— While crossing one of the great mowing-fields of Lakeville, Connecticut, on June 7th, I found quantities of *Carex aurea* scattered everywhere through the rather high grass. This was a distinct surprise, in spite of the many Northern things already found in that region, so the specimens were sent to the Gray Herbarium, and it was found that *Carex aurea* is not mentioned in Bishop's list of Connecticut plants.— Elsie L. Shaw, Lexington, Massachusetts.

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New Stations for Peltandra virginica and Conopholis americana in Maine.— During the last of July, 1900, I found a number of plants of *Peltandra virginica* (L.) growing within the limits of the town of Cornish, Maine. The plant occupied the quaking margin of a small still pond, in company with species of *Sagittaria* and *Pontederia cordata*. The pond is drained, during times of flood, through a number of other ponds into the Little Ossipee River which is tributary to the Saca. The plant was in various stages, from fresh flower to advanced seed.

Miss Kate Furbish has very kindly given me the following information concerning her discovery of this species at Brunswick in 1870.

"The bog where I procured my Arums is now filled in, and has long been converted into house lots. In the days of my going into said bog it was filled with Alder bushes, and it was difficult to get about in it. Our ordinary Arum was very abundant there."

To Mr. M. L. Fernald I am indebted for the following data. "The only occurrence of *Peltandra* in Maine, besides Miss Furbish's Brunswick station, seems to be a record of the plant at South Berwick. (Proc. Port. Soc. Nat. Hist. i. 129)."

At East Parsonsfield in July, 1900, I found in some abundance upon a certain hillside, *Conopholis americana* (L.) growing among second growth Beech and Hemlock. Of this plant Mr. Fernald has given these facts. "*Conopholis* has been collected at Fryeburg by the late Edwin Faxon, and at South Poland by Miss Furbish." — Arthur H. Norton, Westbrook, Maine.

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Aulacomnium heterostichum in Maine.— In April, 1902, while collecting in open, deciduous woods at Vassalboro, Maine, I found a large tuft of *Aulacomnium heterostichum*, Br. & Sch., growing upon a steep, moist bank. The plant was abundantly fruited with old capsules of the previous year and with very immature ones of the present season. In his List of the Mosses of Vermont, Dr. Grout gives three stations for this moss in southern Vermont, but the plant has not been heretofore reported from either Maine or New Hampshire. It is not uncommon in southern New England. Duplicates of this collection are in the herbarium of Mr. J. F. Collins, and of the New England Botanical Club.— Edward B. Chamberlain, Cumberland Centre, Maine.

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Aquilegia canadensis, var. flaviflora in Maine.— I have just noticed the name *Aquilegia canadensis flaviflora* (Tenney) Britton in Britton's Manual. For many years I have had a pale yellow form growing in my garden and on our campus. The originals came from near Topsham, Maine. I suppose this form to be the same as Professor Britton's. Mine has always been true to the parent in seedlings, though it is growing near the typical form.— Leslie A. Lee, Bowdoin College, Brunswick, Maine.

[*A. canadensis*, var. *Phippenii*, J. Robinson, a form with salmon-colored flowers, described from near Salem, Massachusetts, has been found sparingly with the ordinary form of the species by Mr. M. L. Fernald at Orono, Maine. — Ed.]

Juncus Torreyi and Ellisia Nyctelea in Massachusetts. — On the 25 August, 1901, along a railway ditch at Chelsea I came across a colony of a strange looking *Juncus* which proved to be *J. Torreyi*, Coville. It is described in Gray's Manual under *J. nodosus*, L., var. *megacephalus*, Torr.

On 1 June, 1902, while walking along the recently opened Revere Beach Parkway at Everett, I noticed in the newly seeded grassy borders numerous plants of a species I had never before seen hereabouts. The plant, described a few days after to Dr. Robinson, was at once recognized by him as *Ellisia Nyctelea*, L., which he said was a pernicious weed in some of the western states. It was evidently introduced here in impure grass seed and is not likely to maintain itself in this locality at least. So far as I can learn these two species have not before been reported from New England. — Wm. P. Rich.

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# Why Not Spend the Summer in the Maine Woods?

EVERY BOTANIST enjoys bracing air and picturesque country, and, if with these he can combine the pleasure of discovery, his summer is a happy one. No region in the Eastern United States affords the real botanist such opportunity for the pursuit of his studies in the field as the northern two-thirds of Maine. For there he will find twenty thousand (20,000) square miles of forest rarely interrupted save by the innumerable glistening lakes, interlacing rivers and wild waterfalls, and the rough alpine peaks of unexplored mountains. Thoreau's description nearly sixty years ago of a bit of this great forest to the west of Katahdin might well have been written but yesterday:

"There it was, the State of Maine, which we had seen on the map, but not much like that, — immeasurable forest for the sun to shine on, that eastern *stuff* we hear of in Massachusetts. No clearing, no house. It did not look as if a solitary traveller had cut so much as a walking-stick there. Countless lakes, — Moosehead in the southwest, forty miles long by ten wide, like a gleaming silver platter at the end of the table; Chesuncook, eighteen long by three wide, without an island; Millinocket, on the south, with its hundred islands; and a hundred others without a name; and mountains also, whose names, for the most part, are known only to the Indians. The forest looked like a firm grass sward, and the effect of these lakes in its midst has been well compared, by one who has since visited the same spot, to that of a 'mirror broken into a thousand fragments, and wildly scattered over the grass, reflecting the full blaze of the sun.'"

This is the immense forest-park which we invite you to explore. Here you may find a quiet retreat by pleasant waters, in the shelter of giant cliffs; or if a lean-to or bark-hut are not to your liking you can "put up" at one of the log-camps or lodges already built and ready to give you royal welcome to the simple and wholesome life of the Maine woods. If, however, you prefer to cling a little closer to civilization, you will find comfortable quarters and accommodating hosts in the villages scattered here and there along the line of the BANGOR & AROOSTOOK as it makes its way northward across the wilderness. And even at the hotels you will not find yourself very far from the Maine woods, for a walk of a few minutes will bring you to the verge of the "immeasurable forest."

If you are a lover of northern plants you will have rare pleasure in a tramp across country from your temporary home. If you have been familiar with the rocky oak-woods of southern New England, nothing

can be more fascinating than the damp moss-carpeted evergreen forest, such as you will find occupying the low plains and the cool mountain slopes throughout Northern Maine. You can enter vast stretches of such forest on all sides of *Moosehead Lake* and throughout the *Katahdin Iron Works* region, and all along the main line of the railroad and its various northern branches. Here beneath the tall spruces are the rare plants for which at home you have made long and vain pilgrimages: — the tiny Mitre-wort, MITELLA NUDA, with its lace-like petals, the elusive Sweet-Coltsfoot, PETASITES PALMATA, one year blossoming in abundance, and then failing for years to show another of its fragrant heads, and the delicate Tway-blades, LISTERA AURICULATA, CONVALLARIOIDES, and CORDATA, rarely seen except by the botanist ready to creep in the moss. Here, too, you will make many new acquaintances: — the strange Spurred Gentian, HALENIA DEFLEXA, with its interesting bronze and greenish clustered flowers; the little white PYROLA MINOR for which you have hunted in the White Mountains, and nearby its handsome relative, P. ASARIFOLIA with glossy leaves and flesh-colored flowers. Then here are the Club-mosses, LYCOPODIUM COMPLANATUM, SABINAEFOLIUM, and SITCHENSE, species unknown to many save from herbarium-specimens.

In the region of *Fort Kent* and *Van Buren* these spruce woods shelter very many more species which it is worth while to see: — the largest of the Rattlesnake Plantains, GOODYERA MENZIESII, the rare Arctic Fleabane, ERIGERON ACRIS, the remarkable local Wood Betony, PEDICULARIS FURBISHIAE, unknown outside the St. John Valley.

Where the woods grow thin and the ankle-deep carpet of Hypnum changes to a knee-deep carpet of sphagnum, you will find yourself entering one of the Sphagnum-bogs which cover many thousand miles of Maine and New Brunswick. Here, for instance near *Sherman*, *Crystal* or *Island Falls* on the upper Mattawamkeag, or in hundreds of other similar areas to the west and north — in late May and early June the bog is a brilliant display of color: white foam-like masses of the spicy Labrador Tea, LEDUM GROENLANDICUM, rich rosy banks of the Pale Laurel, KALMIA GLAUCA, indefinite white waves of the Alpine Cotton-grass, ERIOPHORUM ALPINUM, brightened here and there with the deep yellows of Cypripediums. Later these bogs will repeat this show of colors in other fine displays: white in TOFIELDIA or in the Swamp Valerian, VALERIANA SYLVATICA, scattered among the Bog Birch, BETULA PUMILA, and the Swamp Honeysuckle, LONICERA OBLONGIFOLIA; rose in the splendid CYPRIPEDIUM SPECTABILE; and orange in the northern Squaw-weed, SENECIO ROBBINSII. But these showy plants are not alone the attractive features of the bogs, for search will reveal humbler and to the botanist more pleasing returns,— rare CARICES, C. TENUIFLORA, GYNOCRATES, and VAGINATA, or the little Sundew, DROSERA LINEARIS.

If instead of to the evergreen forest your path leads over an upland

ridge with its deciduous covering of sugar-maple, beech, and birch, you will again be in a happy hunting ground, for here, in the upland woods between *Houlton*, *Presque Isle*, and *Fort Fairfield*, is the home of DICENTRAS, CLAYTONIAS and DENTARIAS, of VIOLA SELKIRKII, the Seneca Snakeroot, POLYGALA SENEGA, the woodland orchids, HABENARIA HOOKERIANA, and H. BRACTEATA, and other species which brighten the woods of spring and early summer.

The dense woods, however, are not always the best botanizing grounds, and so, even in northern Maine, their charm is enhanced by the presence of a river. If you follow the ledgy and gravelly banks of one of these northern streams,—as the *St. John* between the *Little Black* and the *Aroostook Rivers*, or the Aroostook itself between *Masardis* and the splendid gorge as the river approaches the *St. John*—you will be always alert, for every turn is apt to bring you to some new discovery. It may be a bank pink with the long racemes of OXYTROPIS CAMPESTRIS, var. JOHANNENSIS, or the equally handsome HEDYSARUM BOREALE, the globular heads of Chives, ALLIUM SCHOENOPRASUM, or the dainty evanescent flowers of PRIMULA MISTASSINICA. On some steep cliff by a water-fall you will see the rosettes of the Aromatic fern, ASPIDIUM FRAGRANS, the daisy-like heads of ERIGERON HYSSOPIFOLIUS, the glistening leaves of SHEPHERDIA, or the pink flowers of the rare ANEMONE MULTIFIDA. On the sandy beach you will find great thickets of northern willows, SALIX GLAUCOPHYLLA, etc., and a brilliant display of ASTRAGALUS ALPINUS, TANACETUM HURONENSE, and PRENANTHES RACEMOSA, interspersed with the less showy EQUISETUM VARIEGATUM, TRIGLOCHIN PALUSTRIS, and JUNCUS ALPINUS, var. INSIGNIS. Higher up the bank, on the talus-slope, are the delicate little Gentian, GENTIANA AMARELLA, var. ACUTA, and the handsome White Painted-Cup, CASTILLEJA PALLIDA.

If you follow the rivers you must not become so absorbed in the shore vegetation as to forget the aquatic plants. This is a land of lakes and ponds; and these and the channels by which they are emptied are often carpeted by plants too little known to the average botanist:— MYRIOPHYLLUM FARWELLII and POTAMOGETON OBTUSIFOLIUS in the *Piscataquis* and *Mattawamkeag Rivers* and their crystal-clear tributaries; and MYRIOPHYLLUM ALTERNIFLORUM and JUNCUS SUBTILIS in the *Mattawamkeag*, *Aroostook* and *St. John*.

The mountains of northern Maine, after all, are among the most fascinating regions for botanizing. If you have once lived on *Katahdin* you can never forget the wild grandeur of its Great Basin and the sheer cliffs and splendid Tableland. In exploring this most impressive of eastern mountains, one finds himself walking over broad carpets of the Alpine Bearberry, ARCTOSTAPHYLOS ALPINA, loaded with deep black berries, the depressed RHODODENDRON LAPPONICUM, gorgeous with rosy-purple flowers, the handsome BRYANTHUS TAXIFOLIUS, and the delicate pink-

flowered CASSIOPE and the close-matted Alpine Azalea, LOISELEURIA. Then it is most thrilling to find in their alpine homes the other plants unknown on the lowlands, as COMANDRA LIVIDA, parasitic on the roots of alpine blueberries and crowberries, CAREX SAXATILIS and KATAHDINENSIS about alpine tarns, and EPILOBIUM ANAGALLIDIFOLIUM and SAXIFRAGA STELLARIS, var. COMOSA, hiding under cold wet boulders and cliffs.

But the greatest charm of the Maine woods for botanists is not in the regions which are now explored and whose vegetation is known. The regions of special interest are the hundreds of mountains, lakes and streams upon which no botanist has yet ventured. There you can go with the spirit of true discoverers, for everything you observe will be of some importance to science. These fields for real investigation are on all sides. For instance, there is only a very incomplete record of the vegetation about *Moosehead Lake*, and only two of its mountains, *Kineo* and *Squaw* have been botanically explored. Only three other large lakes in northern Maine have been visited by botanists and those — *Mattawamkeag*, *Squawpan*, and *Portage* — very superficially examined. No botanist knows *Schoodic*, *Seboois*, *Millinocket*, *Pamedumcook*, *Lobster*, *Chesuncook*, *Chamberlain*, *Caucomgomoc*, *Chemquasabamticook*, *Froid*, *Eagle*, and the countless other splendid waters like a "mirror broken into a thousand fragments and wildly scattered over the grass." Nor does he know the slopes, commanding summits and abysses of the *Sourdnahunk Mts.*, *Traveller*, *Moosilauke*, *Baker*, the *Spencers*, and the hundreds of others "whose names are known only to the Indians."

The northwestern section of Maine is essentially virgin territory; and no successful botanical trip has been made on the upper *St. Francis*. Yet within a few miles of this Maine border there are many northern plants which may well be watched for within New England territory. The botanist whose good fortune takes him to the upper *St. Francis* may watch with hope for PLEUROGYNE CARINTHIACA, ERIOPHORUM RUSSEOLUM, ASTRAGALUS ELEGANS, PARNASSIA PALUSTRIS, SAXIFRAGA CAESPITOSA, ANEMONE PARVIFLORA, CORNUS SUECICA, PEDICULARIS PALUSTRIS, and many other arctic plants known closely to approach northern Maine.

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